

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims**

- 1-7. (cancelled)
8. (previously presented) The isolated polynucleotide of claim 73, wherein the polypeptide comprises,
  - (a) at least one of (i) the sequence PPPGY (SEQ ID NO:1) and (ii) the sequence LPPAY (SEQ ID NO:2) and
  - (b) at least three domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3), wherein Y represents a Tyrosine residue, G represents a Glycine residue, L represents a Leucine residue, A represents an Alanine residue, X represents any amino acid residue, and P represents a Proline residue.
9. (currently amended) The isolated polynucleotide of claim 73, wherein the polypeptide comprises the sequence of SEQ ID NO:5, ~~or a conservative variant thereof.~~
10. (previously presented) The isolated polynucleotide of claim 8, wherein the polynucleotide comprises the sequence of SEQ ID NO:4.
11. (previously presented) A gene comprising the polynucleotide of claim 73.
12. (original) A vector comprising the gene of claim 11.
13. (previously presented) A vector comprising the polynucleotide of claim 73.
14. (original) A host cell comprising the vector of claim 12.
15. (previously presented) A method of producing a polypeptide, the method comprising maintaining the host cell of claim 14 under conditions such that the polypeptide is expressed, then collecting the polypeptide.
- 16-47. (cancelled)

48. (currently amended) The isolated polynucleotide of claim 73, wherein the polypeptide comprises the sequence of SEQ ID NO:12, ~~or a conservative variant thereof.~~

49. (cancelled)

50-52. (cancelled)

53. (previously presented) The isolated polynucleotide of claim 73 wherein the polypeptide comprises

- (a) the sequence PPXY (SEQ ID NO:8) and
- (b) at least three domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3), wherein Y represents a Tyrosine residue, G represents a Glycine residue, X represents any amino acid residue, and P represents a Proline residue.

54-59. (cancelled)

60. (original) The isolated polynucleotide of claim 8, wherein the polynucleotide is a human or bovine polynucleotide.

61. (currently amended) An isolated polynucleotide comprising a sequence that is at least 75% identical to nucleotides 36 to 975 of SEQ ID NO: 4 as determined using BLASTN 2.1.2 matrix; blastn matrix; 1 -3; gap penalties: existence=5, extension=2, wherein a polypeptide encoded by the polynucleotide induces mammalian oocyte activation, and wherein the polypeptide comprises,

(a) at least one of (i) the sequence PPPGY (SEQ ID NO:1) and (ii) the sequence LPPAY (SEQ ID NO:2) and

(b) at least three domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3), wherein Y represents a Tyrosine residue, G represents a Glycine residue, L represents a Leucine residue, A represents an Alanine residue, X represents any amino acid residue, and P represents a Proline residue.

62. (currently amended) An isolated polynucleotide comprising a sequence that is at least 75% identical to nucleotides 1 to 705 of SEQ ID NO: 11 as determined using BLASTN 2.1.2 matrix; blastn matrix; 1 -3; gap penalties: existence=5, extension=2, wherein a polypeptide encoded by the polynucleotide induces mammalian oocyte activation, and wherein the polypeptide comprises,

(a) at least one of (i) the sequence PPPGY (SEQ ID NO:1) and (ii) the sequence LPPAY (SEQ ID NO:2) and

(b) at least three domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3), wherein Y represents a Tyrosine residue, G represents a Glycine residue, L represents a Leucine residue, A represents an Alanine residue, X represents any amino acid residue, and P represents a Proline residue.

63-64. (cancelled)

65. (previously presented) The isolated polynucleotide of claim 8, wherein the polypeptide has a molecular weight of about 32 kDa.

66. (previously presented) The isolated polynucleotide of claim 8, wherein the polypeptide comprises 10 domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3).

67. (previously presented) The isolated polynucleotide of claim 8, wherein the polypeptide binds to (a) tyrosine kinase c-Yes, (b) a c-Yes adapter protein, or (c) both tyrosine kinase c-Yes and a c-Yes adapter protein, wherein the c-Yes adapter protein binds to tyrosine kinase c-Yes.

68-72. (cancelled)

73. (currently amended) An isolated polynucleotide comprising a sequence selected from the group consisting of:

a sequence as defined in SEQ ID NO: 4,

a sequence as defined in SEQ ID NO:11,

a sequence that hybridizes to the complement of the sequence defined in SEQ ID NO:4, and

a sequence that hybridizes to the complement of the sequence defined in SEQ ID NO:11,

wherein hybridization occurs in 6X SSC at about 45°C followed by one or more washes in 0.2 X SSC, 0.1% SDS at 50°C; and

wherein a polypeptide encoded by the polynucleotide induces mammalian oocyte activation.

74. (previously presented) The isolated polynucleotide of claim 8, wherein the polynucleotide comprises the sequence of SEQ ID NO:11.

75. (new) The isolated polynucleotide of claim 61, wherein the sequence is at least 90% identical to nucleotides 36 to 975 of SEQ ID NO: 4.

76. (new) The isolated polynucleotide of claim 61, wherein the sequence is at least 95% identical to nucleotides 36 to 975 of SEQ ID NO:4.

77. (new) The isolated polynucleotide of claim 62, wherein the sequence is at least 90% identical to nucleotides 1 to 705 of SEQ ID NO: 11.

78. (new) The isolated polynucleotide of claim 62, wherein the sequence is at least 95% identical to nucleotides 1 to 705 of SEQ ID NO: 11.

79. (new) The isolated polynucleotide of claim 73, wherein the polypeptide is at least 75% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.

80. (new) The isolated polynucleotide of claim 73, wherein the polypeptide is at least 90% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.

81. (new) The isolated polynucleotide of claim 73, wherein the polypeptide is at least 95% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.
82. (new) An isolated polynucleotide comprising a sequence selected from the group consisting of:  
a sequence that hybridizes to the sequence defined in SEQ ID NO:4,  
a sequence that hybridizes to the sequence defined in SEQ ID NO:11,  
wherein hybridization occurs in 6X SSC at about 45°C followed by one or more washes in 0.2 X SSC, 0.1% SDS at 50°C; and  
wherein a polypeptide encoded by the complement of the polynucleotide induces mammalian oocyte activation.
83. (new) The isolated polynucleotide of claim 82, wherein the polypeptide comprises,  
(b) at least one of (i) the sequence PPPGY (SEQ ID NO:1) and (ii) the sequence LPPAY (SEQ ID NO:2) and  
(b) at least three domains, each domain comprising the sequence YGXPPXG (SEQ ID NO:3), wherein Y represents a Tyrosine residue, G represents a Glycine residue, L represents a Leucine residue, A represents an Alanine residue, X represents any amino acid residue, and P represents a Proline residue.
84. (new) A gene comprising the polynucleotide of claim 82.
85. (new) A vector comprising the gene of claim 84.
86. (new) A vector comprising the polynucleotide of claim 82.
87. (new) A host cell comprising the vector of claim 85.
88. (new) A host cell comprising the vector of claim 86.

89. (new) A method of producing a polypeptide, the method comprising maintaining the host cell of claim 87 under conditions such that the polypeptide is expressed, then collecting the polypeptide.

90. (new) The isolated polynucleotide of claim 82, wherein the polypeptide is at least 75% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.

91. (new) The isolated polynucleotide of claim 82, wherein the polypeptide is at least 90% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.

92. (new) The isolated polynucleotide of claim 82, wherein the polypeptide is at least 95% identical to the polypeptide encoded by SEQ ID NO: 4 or SEQ ID NO:11.

93. (new) A host cell comprising the vector of claim 13.